

Experimental evidence for opposing effects of high deer density on tick-borne disease pathogen prevalence and hazard

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Additional file 2: Summary tables for GLMs and GLMMs

Description: Full summary tables from the selected models to explain what causes variations in questing nymph abundance (Table S1), vegetation height (Table S2), vegetation density (Table S2), tree height (Table S2) bank vole abundance (Table S3) nymphal infection prevalence (Table S4) and the density of nymphs infected with *B. burgdorferi* s.l. (Table S5).

Table S1 Summary table from the selected model to explain what causes variations in questing nymph abundance

	Estimate (Log)	Std Error	z-value	p-value
Conditional model				
Intercept	2.46	0.10	24.93	<0.001
Deer treatment: deer exclusion	-2.35	0.13	-18.69	<0.001
Month				
May	-0.24	0.08	-2.79	0.005
September	-0.29	0.07	-4.35	<0.001
Year				
2014	0.04	0.06	0.69	0.49
2018	0.89	0.08	11.08	<0.001
2019	-0.23	0.10	-2.41	0.02
Habitat				
Heather	-0.83	0.06	-13.27	<0.001
Pine	-0.16	0.06	-2.77	0.006
Relative humidity	-0.18	0.03	-5.28	<0.001
Ground wet: yes	-0.49	0.18	-2.77	0.006
Temperature	-0.10	0.04	-2.36	0.02
Zero-inflation model				
Intercept	0.04	0.06	0.69	<0.001
Deer treatment: deer exclusion	0.89	0.08	11.08	<0.001
Month: May	-0.23	0.10	-2.41	<0.001
Month: September	-0.83	0.06	-13.27	0.99
Habitat: heather	-0.16	0.06	-2.77	<0.001
Habitat: pine	-0.18	0.03	-5.28	0.97
Year: 2014	-0.49	0.18	-2.77	0.01
Year: 2018	-0.10	0.04	-2.36	<0.001
Year: 2019	-0.57	0.20	-2.81	<0.001
Ground wet: yes	1.86	0.33	5.70	<0.001

Table S2 Summary table from the selected model to explain what causes variations in ground vegetation height, ground vegetation density and tree height

	Estimate (Log)	Std Error	t-value
Vegetation height			
Intercept	32.90	3.39	9.69
Deer treatment: deer exclusion	14.46	4.76	3.04
Month			
May	-4.59	0.43	-10.65
September	-1.45	0.43	-3.38
Year			
2014	4.46	0.44	10.10
2018	7.81	0.51	15.32
2019	6.82	0.52	13.15
Habitat			
Heather	2.75	0.43	6.41
Pine	1.19	0.43	2.77

Table S3 Summary table from the selected model to explain what causes variations in bank vole abundance

	Estimate (Log)	Std Error	z-value	p-value
Model with deer treatment				
Intercept	-5.27	0.71	-7.44	<0.001
Deer treatment: deer exclusion	2.62	0.74	3.54	<0.001
Model with vegetation height				
Intercept	-9.51	1.86	-5.11	<0.001
Vegetation height	0.16	0.05	3.57	<0.001
Year: 2018	-2.32	0.78	-3.00	0.003

Table S4 Summary table from the selected model to explain what causes variations in nymphal infection prevalence

	Estimate (log)	Std Error	z-value	p-value
Model focussing on deer treatment (<i>B. burgdorferi</i> s.l.) H2 – dilution hypothesis				
Intercept	-6.20	0.96	-6.47	<0.001
Deer treatment: deer exclusion	0.77	0.52	1.48	0.14
Month				
May	-1.07	0.83	-1.30	0.20
September	0.90	0.50	1.79	0.07
Habitat				
Heather	1.05	0.70	1.49	0.14
Pine	1.45	0.62	2.34	0.02
Year				
2014	0.72	0.74	0.97	0.33
2018	-1.03	0.95	-1.09	0.28
2019	1.02	0.70	1.46	0.14
Model focussing on bank vole abundance (<i>B. afzelii</i>) H3 – ecological cascades hypothesis				
Intercept	-7.41	1.22	-6.08	<0.001
Bank vole abundance year _{t-1}	0.05	0.05	1.06	0.29
Month				
May	0.90	1.23	0.73	0.47
September	2.48	1.06	2.34	0.02
Year: 2019	1.90	0.79	2.41	0.02

Table S5 Summary table from the selected model to explain what causes variations in the density of nymphs infected with *B. burgdorferi* s.l.

	Estimate (Log)	Std Error	z-value	p-value
Conditional model				
Intercept	-5.85	0.75	-7.84	<0.001
Deer treatment: deer exclusion	-1.76	0.28	-6.26	<0.001
Habitat				
Heather	0.05	0.42	0.12	0.91
Pine	0.83	0.39	2.12	0.03
Temperature	0.10	0.05	2.27	0.02
Zero-inflation model				
Intercept	-1.61	1.10	-1.47	0.14
Ground wet: no	3.10	1.15	2.71	0.007